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Notice of Allowability

Application No.

09/477,790

Examiner

Herng-der Day

Applicant(s)

BARRETT, GEOFF

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment received June 17, 2004 and July 19, 2004.
2. ☒ The allowed claim(s) is/are 2-4 and 8-21.
3. ☒ The drawings filed on 17 June 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/028,415.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

KEVIN J. TESHA
SUPERVISORY
PATENT EXAMINER

DETAILED ACTION

1. This communication is in response to Applicant's Amendment to Office Action dated March 9, 2004, mailed June 14, 2004 and received by PTO June 17, 2004, as well as Applicant's Supplemental Amendment Faxed July 19, 2004.

1-1. Claims 2-4 and 8-21 are pending.

1-2. Claims 2-4 and 8-21 have been examined and allowed.

Interview Summary

2. While reviewing Applicant's Amendment dated June 17, 2004, the Examiner located the following problems:

(1) The amended claim 1 covered the same subject matter as the amended claims 2.

(2) The amended claims 5-7 covered the same subject matter as the amended claims 8 and 11-12.

(3) The amended claims 8 and 13 comprised informalities.

On July 19, 2004, the Examiner telephoned Mr. James H. Morris (Reg. No.: 34,681) to discuss these problems. In response to the telephone conversation, Applicant submitted the Supplemental Amendment on July 19, 2004, canceled claims 1 and 5-7, and amended claims 8 and 13.

Reasons for Allowance

3. The following is an Examiner's statement of reasons for allowance:

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3-1. The closest prior art of record discloses:

(1) A neural network model for a reverse modeling process (Vai et al., "Qualitatively Modeling Heterojunction Bipolar Transistors for Optimization: a Network Approach");

(2) A bi-directional neural network for reverse modeling (Wu et al., "A Massively Parallel Reverse Modeling Approach for Semiconductor Devices and Circuits"); and

(3) A system and method for representing physical environment (Barrett et al., U.S. Patent 6,134,512).

3-2. Independent claim 2 is directed at a method of synthesizing a reverse model of a finite state machine as shown in Fig. 3. This independent claim identifies the distinct combination of features of "transforming a transition function of a state machine model of said finite state machine into a constraint on the reverse model, wherein the reverse model is a reverse model of the state machine model" and "applying a parameterization of said constraint to all transitions of the reverse model", which has not been uncovered in a single teaching, nor would a modification of prior art references be obvious to one of ordinary skill in the art to yield these limitations in the context of the claim. Claim 2 is deemed allowable.

Dependent claims 3-4 are allowable as they depend on the allowed independent claim 2.

3-3. Independent claim 8 is directed at a method of calculating a post-image in a finite state machine as shown in Fig. 2 and Fig. 3. This independent claim identifies the distinct combination of features of "forming a reverse model of said finite state machine, wherein the reverse model is a reverse model of a state machine model of the finite state machine" and "calculating a pre-image in said reverse model, wherein the pre-image in said reverse model is equivalent to the post-image in said finite state machine", which has not been uncovered in a

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single teaching, nor would a modification of prior art references be obvious to one of ordinary skill in the art to yield these limitations in the context of the claim. Claim 8 is deemed allowable.

Dependent claims 9-12 are allowable as they depend on the allowed independent claim 8.

3-4. Independent claim 13 is directed at a device for synthesizing a reverse model of a finite state machine as shown in Fig. 2. This independent claim identifies the distinct combination of features of “a logical device for transforming said transition functions of the state machine model of said finite state machine into constraints on said reverse model, wherein the reverse model is a reverse model of the state machine model” and “a parameterization processor for applying a parameterization of said constraints to said estimate of transition functions of said reverse model to form transition functions of said reverse model”, which has not been uncovered in a single teaching by others, nor would a modification of prior art references be obvious to one of ordinary skill in the art to yield these limitations in the context of the claim. Claim 13 is deemed allowable.

Dependent claims 16 and 18-19 are allowable as they depend on the allowed independent claim 13.

3-5. Independent claim 14 is directed at a device for calculating a post-image in a finite state machine as shown in Fig. 2. This independent claim identifies the distinct feature, “a forming device substituting the state variables of the reverse model by the transition functions of the reverse model to provide a new set of states representing the pre-image of said reverse model, and thus provide the post-image in said finite state machine”, which has not been uncovered in a single teaching by others, nor would a modification of prior art references be obvious to one of

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ordinary skill in the art to yield this limitation in the context of the claim. Claim 14 is deemed allowable.

Dependent claims 15, 17, and 20-21 are allowable as they depend on the allowed independent claim 14.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

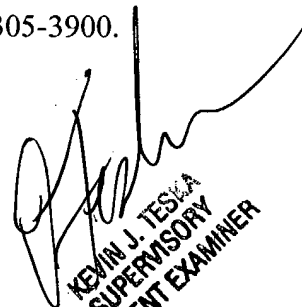
Conclusion

5. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (703) 305-5269. The Examiner can normally be reached on 9:00 - 17:30.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Jean Homere can be reached on (703) 308-6647. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Herng-der Day *H.D.*
July 20, 2004


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER